CLAIMS

What is claimed is:

1. A method of improving fault-based multi-page pre-
5   fetches comprising the steps of:

    determining, upon receiving a request to read data
    randomly from a file, whether previous data has been
    read from memory or from a storage device, the request
10 including a range of data to be read, the range of data
    spanning more than one page; and

    attempting to read the data from memory if previous
    data has been read from memory or using the range to
15 read the data all at once from the storage device if
    previous data has been read from the storage device.

2. The method of Claim 1 wherein if the data fails to be
    in memory during the read attempt, the range is used to
20 fetch the data all at once into the memory using a page
    fault.

3. The method of Claim 2 wherein when a file is opened, it
    is assigned a value, the value for facilitating the
25 determining step.

4. The method of Claim 3 wherein if it is determined that
    previous data was read from memory, the value is
    increased by an award if the requested data is in
30 memory.

5.   The method of Claim 4 wherein if it is determined that previous data was read from memory, the value is decreased by a penalty if the requested data is not in memory.

6.   The method of Claim 5 wherein if it is determined that previous data was read from the storage device, the value is increased by the award.

7.   The method of Claim 6 wherein the penalty is larger than the award.

8.   A computer program product on a computer readable medium for improving fault-based multi-page pre-fetches comprising:

     code means for determining, upon receiving a request to read data randomly from a file, whether previous data has been read from memory or from a storage device, the request including a range of data to be read, the range of data spanning more than one memory page; and

     code means for attempting to read the data from memory if previous data has been read from memory or for using the range to read the data all at once from the storage device if previous data has been read from the storage device.

9.   The computer program product of Claim 8 wherein if the data fails to be in memory during the read attempt, the range is used to fetch the data all at once into the memory using a page fault.

10. The computer program product of Claim 9 wherein when a file is opened, it is assigned a value, the value for facilitating the determining code means.

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11. The computer program product of Claim 10 wherein if it is determined that previous data was read from memory, the value is increased by an award if the requested data is in memory.

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12. The computer program product of Claim 11 wherein if it is determined that previous data read was from memory, the value is decreased by a penalty if the requested data is not in memory.

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13. The computer program product of Claim 12 wherein if it is determined that previous data was read from the storage device, the value is increased by the award.

20 14. The computer program product of Claim 13 wherein the penalty is larger than the award.

15. A computer system comprising:

25   at least one storage device for storing code data; and

at least one processor for processing the code data to determine, upon receiving a request to read data randomly from a file, whether previous data has been
30   read from memory or from the storage device, the request including a range of data to be read, the range of data spanning more than one memory page and for

attempting to read the data from memory if previous data has been read from memory or using the range to read the data all at once from the storage device if previous data has been read from the storage device.

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16. The computer system of Claim 15 wherein if the data fails to be in memory during the read attempt, the range is used to fetch the data all at once into memory using a page fault.

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17. The computer system of Claim 16 wherein when a file is opened, it is assigned a value, the value for determining whether data has been read from memory or from the storage device.

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18. The computer system of Claim 17 wherein if it is determined that previous data was read from memory, the value is increased by an award if the requested data is in memory.

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19. The computer system of Claim 18 wherein if it is determined that previous data was read from memory, the value is decreased by a penalty if the requested data is not in memory.

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20. The computer system of Claim 19 wherein if it is determined that previous data was read from the storage device, the value is increased by the award.

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